

Patent Claims

1. Device for producing a riveted joint with means (21, 25) for the driving-in of a rivet (14) having a rivet jacket (14a) and a rivet pin (14b) guided by the rivet jacket (14a) through workpieces to be joined and with means for the pulling of the rivet (14), **characterized in that** the means (21, 25) for the driving-in of the rivet (14) act on the rivet pin (14b).
2. Device as in Claim 1, characterized in that the means (21, 25) for the driving-in of the rivet (14) into a cylindrical part, especially into a firing channel (70), include a firing bolt (25) and a cylindrical striking member (21) arranged between the rivet (14) and the firing bolt (25), and the striking member (21) impacts on the firing bolt (25).
3. Device as in Claim 2, characterized in that the striking member (21) has a centering device for the rivet pin (14b) on its end turned toward the rivet (14).
4. Device as in Claim 2 or 3, characterized in that the striking member (21) is held in the cylindrical part by a first flexible element, especially by a first helical spring (51), in axial contact on the rivet pin.
5. Device as in one of the Claims 2 to 4, characterized in that on the end of the cylindrical part turned toward the rivet (14) is arranged a flexible buffer element (49), which buffers the movement of the striking member (21) during driving-in of the rivet (14).
6. Device as in one of the Claims 2 to 5, characterized in that the cylindrical part is formed by boreholes in alignment in a piston (20) and in a joining member (18) joining with the piston (20).
7. Device as in Claim 6, characterized in that the means for pulling the rivet (14) include a clamp sheathing (4) connected with the joining member (18), which surrounds the clamping jaws (3) arranged around the rivet pin (14b), and that the clamp sheathing (4) and the joining member (18) are guided in a guiding sleeve (16), in the axial end of which turned toward the rivet (14) is inserted an end piece (15) provided with a borehole in the center to receive the rivet pin (14b), which end piece spreads the clamping jaws (3)

engaging on it before and during the driving-in under the effect of a second flexible element (7).

8. Device as in Claim 7, characterized in that the piston (20) can be moved in a cylinder (22) connected with the guiding sleeve (16) during pulling of the rivet (14), the piston being moved counter to the driving-in direction through pressure application coming from the piston (20) counter to the effect of the force of a third flexible element (8).
9. Device as in one of the Claims 5 to 8, characterized in that the device has a compressed air connection (68) and a multi-stage pneumatic switch element (59, 60, 61), which in a first switch stage fires the firing bolt, in a second switch stage feeds the compressed air to a pneumatic/hydraulic pressure converter preferably mounted in a handle (71) of the device, which makes ready the pressure stress application of the piston (20) during pulling of the rivet, and in a third switch stage evacuates the pneumatic/hydraulic pressure converter by means of a rapid evacuation valve.
10. Rivet for use in a device as in one of the Claims 1 to 9, characterized in that the rivet pin (14b) is connected tightly with the rivet jacket (14a).
11. Rivet as in Claim 10, characterized in that the rivet pin (14b) at its first end turned toward the workpieces has a point (14c).
12. Rivet as in Claim 11, characterized in that the first end is of pyramid shape.
13. Rivet as in one of the Claims 10 to 12, characterized in that the rivet pin (14b) is tapered at its second end (14g) more distant from the workpieces, preferably tapered in a pyramid shape.
14. Rivet as in one of the Claims 10 to 13, characterized in that the rivet pin (14b) includes catching means in the area of the rivet jacket (14a) aligned toward the point (14c) of the rivet (14).